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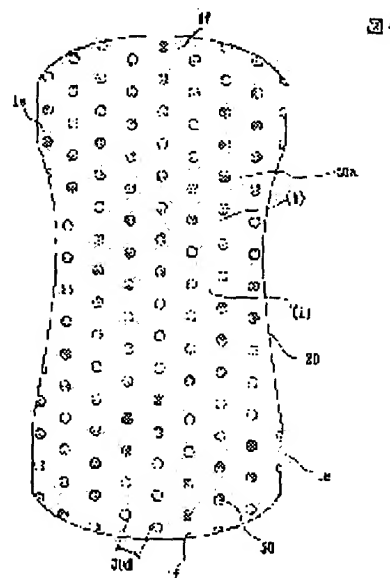
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## (54) HYDROLYZABLE ABSORPTIVE ARTICLE

## (57)Abstract:

PROBLEM TO BE SOLVED: To solve such problems in sanitary napkins and panty liners, that the rear surfaces of back sheets are provided with tacky adhesive parts for preventing the slipping to underwear, or the like, but when these absorptive articles are made hydrolyzable, the decomposition of the tacky adhesive parts delay and therefore the back sheets float in the state of relatively large areas within a septic tank.

SOLUTION: The rear surface of the back sheet 20 is provided with the tacky adhesive parts 30 by dispersing spacings between a longitudinal direction and a transverse direction. The exposed parts 20a of the sheet are made continuous as a whole and are so formed as to arrive at edges 1f and 1e of the absorptive article. The spacings between the tacky adhesive parts 30 are previously set longer than the maximum fiber length of the sheet. Consequently, when the exposed parts 20a of the sheet are collapsed by water, the tacky adhesive parts 30 are dispersed so as to part from each other. The back sheet may thus be finely dispersed in the water.



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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the absorptivity goods of hydration nature used for a sanitary napkin, a panties liner, a \*\*\*\*\* pad, etc.

[0002]

[Description of the Prior Art] When it is formed for the material of hydration nature (water collapsibility) and passes to a rinsing toilet as absorptivity goods, such as a sanitary napkin, a panties liner, and a \*\*\*\*\* pad, in recent years, what is distributed by a lot of Mizuuchi has appeared. These are indicated by JP,8-38547,A and JP,8-19571,A.

[0003]

[Problem(s) to be Solved by the Invention] However, among the aforementioned absorptivity goods, with a sanitary napkin, a panties liner, and a \*\*\*\*\* pad, in order to make it adhere to the external wearing inside of the body, such as arrival at the bottom, and a diaper, and to prevent the position gap under wearing, and \*\*\*\*, a binder is prepared in the rear face (side which faces an external wearing object) of the backseat of absorptivity goods.

[0004] These binders tend to be influenced of the excretion liquid absorbed by the humidity and absorptivity goods of the external wearing inside of the body, and adhesion tends to decline. Therefore, a binder presents to some extent long time adhesion, and it is desirable that there are also to some extent still more amounts of a binder. However, the binder which can maintain adhesion for a long time is used, and if there are too many amounts of a binder, the hydration nature of absorptivity goods will fall remarkably.

[0005] That is, if it is thrown away into a rinsing toilet etc. and a lot of water is given, although the aforementioned backseat will collapse with water, since the hydration of the adhesion section becomes late compared with a backseat at this time, distribution of the fiber of a backseat is suppressed by the adhesion section and a backseat cannot distribute finely underwater. Consequently, while the backseat has been a comparatively big area within a septic tank, it floats, or a bird clapper is one of the causes of plugging within a septic tank further.

[0006] The purpose of this invention is to offer the absorptivity goods of the hydration nature the backseat enabled it to distribute for every small area underwater though the hydration of the adhesion section was overdue when the adhesion section made to hang on a backseat to an external wearing object was prepared.

[0007]

[Means for Solving the Problem] In the absorptivity goods of the hydration nature which has the facing of wrap hydration nature for the backseat of the hydration nature to which the technical problem and the purpose of the above-mentioned former contain water-dispersion fiber, the absorption layer of hydration nature, and the aforementioned absorption layer The adhesion section for making an external wearing object hang absorptivity goods on the rear face of the aforementioned backseat opens an interval in lengthwise and the longitudinal direction of absorptivity goods, and is prepared in two or more places.

The interval of the adjacent adhesion sections is attained by the absorptivity goods of the hydration nature characterized by the \*\*\*\*\* from the maximum fiber length of the aforementioned fiber contained in the aforementioned backseat.

[0008] The adhesion section prepared in the backseat of the absorptivity goods of this invention is prepared in two or more places in spot, and the interval of the adhesion sections is longer than the fiber length of the fiber contained in a backseat. Therefore, one fiber contained in a backseat does not contact the two or more adhesion sections. Therefore, the hydration of a backseat is not checked by the binder when absorptivity goods are poured and thrown away into a toilet etc. Moreover, since the adhesion sections are separated, even if the adhesion section of a certain part is influenced of the excretion liquid absorbed by the humidity and absorptivity goods of the external wearing inside of the body, no adhesion sections are influenced. Therefore, adhesiveness cannot fall easily.

[0009] As for the aforementioned adhesion section, being dotted throughout the rear face of the aforementioned backseat is desirable. As for the aforementioned adhesion section, it is still more desirable to have arranged regularly in the aforementioned lengthwise one and the longitudinal direction.

[0010] Moreover, with the rear face of the aforementioned backseat, it is desirable that the sheet outcrop in which the aforementioned adhesion section does not exist is continuing among all the adhesion sections and adhesion sections, and the aforementioned sheet outcrop is prolonged at the marginal part of the lengthwise ends of the aforementioned backseat and the marginal part of longitudinal direction ends.

[0011] By this invention, the aforementioned adhesion section can be formed by the binder of water bloating tendency. The aforementioned-in this case binder is an acrylic emulsion with the hydrophilic protective colloid layer.

[0012] Or a binder may be polyvinyl alcohol. It is desirable that the sum total of the area which the aforementioned adhesion section occupies in this invention is 10 - 30% of the area of a backseat.

[0013] Moreover, it is desirable that the maximum fiber length of the aforementioned fiber is 4mm or less. The aforementioned backseat is JIS. P It is desirable that the hydration nature measured according to 4501 is 300 or less seconds.

[0014] In the rear face of the aforementioned backseat, the aforementioned adhesive layer shall be stuck on a wrap release paper, and this release paper shall be hydration nature.

[0015]

[Embodiments of the Invention] Hereafter, this invention is explained, referring to a drawing. For the perspective diagram as which drawing 1 regarded the absorptivity goods of this invention from the side front (side which meets a wearing person), the perspective diagram having shown the partial cross section of the absorptivity goods which showed drawing 2 to drawing 1, and drawing 3, the expanded sectional view by the III-III line of drawing 1 and drawing 4 are bottom plan view \*\*\*\* which looked at the absorptivity goods shown in drawing 1 from the background (side which meets an external wearing object) where a release paper is removed. In addition, the longitudinal direction of absorptivity goods is made into the direction of Y, and let the cross direction which intersects perpendicularly with the direction of Y mostly be the direction of X.

[0016] The absorptivity goods shown in drawing 1 are a sanitary napkin or a panties liner, and are the absorptivity goods of the hydration nature of this invention.

[0017] The absorptivity goods 1 of drawing 1 consist of absorption layers 21 of the hydration nature inserted between the facing 10 of the hydration nature turned to a wearing person side as shown in drawing 2, the backseat 20 of hydration nature, and facing 10 and a backseat 20. And it is mutually joined by water-soluble adhesives etc. around the absorption layer 21, and facing 10 and the backseat 20 form marginal parts 1e and 1f.

[0018] As shown in drawing 4, two or more adhesion sections 30 are formed in the whole surface in the shape of polka dots at the background of the main part of the absorptivity goods 1, i.e., the rear face of a backseat 20, (side which meets an external wearing object). As furthermore shown in drawing 3, the release paper 22 which protects the adhesion of the adhesion section 30 preferably just before use is

formed in the absorptivity goods 1.

[0019] The adhesion section 30 which the aforementioned release paper 22 was removed at the time of wearing of the absorptivity goods 1, and the absorptivity goods 1 were formed in the KUROTCHI section inside external wearing objects, such as arrival at the bottom and a diaper, and was prepared in the background of a main part is adhered and hung on the inside of the KUROTCHI section.

[0020] A diameter is desirable and the configuration of the adhesion section 30 is 1mm or more in circle configuration in 10mm or less what is shown in drawing 4 . however, the adhesion sections 30 may be the shape of an ellipse or an ellipse long in the direction of Y, and a square configuration -- it is -- \*\* Or width of face may be 1mm or more, and length may be the thing of the shape of a stripe 6mm or more in 15mm or less at 5mm or less. In the rear face of a backseat 20, each [ these ] adhesion section 30 opens an interval in the both sides of lengthwise (the direction of Y), and a longitudinal direction (the direction of X), and is formed in two or more places in each of the aforementioned lengthwise one and a longitudinal direction. Preferably, the aforementioned adhesion section 30 is regularly arranged to the both sides of lengthwise and a longitudinal direction. Moreover, the adhesion section 30 is formed to 1f of whole region of the rear face of a backseat 20, i.e., a lengthwise marginal part, lateral marginal part 1e, or the latest position of these marginal parts 1f and 1e.

[0021] Moreover, sheet outcrop 20a of the backseat 20 in which the aforementioned adhesion section 30 is not formed is continuing mutually in (i) between all the adhesion sections 30 and adhesion sections 30, and the aforementioned sheet outcrop 20a is prolonged to 1f of lengthwise marginal parts, and lateral marginal part 1e. That is, without sheet outcrop 20a between all the adhesion sections 30 and adhesion sections 30 spreading throughout the rear face of a backseat 20, and moreover dividing it on the way, it is formed so that the aforementioned marginal parts 1f and 1e may be reached.

[0022] In these absorptivity goods, since the comparatively small adhesion section 30 opens an interval mutually, distributes throughout the rear face of a backseat 20 and is prepared, even if the adhesion section 30 of a certain portion is influenced of the excretion liquid absorbed by the humidity and absorptivity goods of the external wearing inside of the body, no adhesion sections 30 are influenced. Therefore, the adhesiveness of the adhesion section 30 cannot fall easily while in use. Moreover, since it is prepared all over the backseat 20, the absorptivity goods 1 can be made to hang on an external wearing object certainly.

[0023] Moreover, if the absorptivity goods 1 are thrown away into a rinsing toilet and a lot of water is given, from the marginal parts 1f and 1e of the aforementioned absorptivity goods 1, water will permeate the aforementioned sheet outcrop 20a, it will go, and the aforementioned sheet outcrop 20a will collapse with water. Since it is prolonged without the aforementioned sheet outcrop 20a's crossing all over a backseat 20, and dividing it at this time, when sheet outcrop 20a collapses with water among all the adhesion sections 30 and adhesion sections 30, the portion in which each adhesion section 30 is formed can separate mutually. Therefore, that a backseat 20 continues being a large area does not remain [ in a septic tank etc. ].

[0024] The interval of 30d of adhesion section 30 which adjoin each other especially is formed for a long time than the maximum fiber length of the fiber contained in a backseat 20. Thus, when were formed and a backseat 20 collapses with water in (i) between the adhesion section 30 and the adhesion section 30, it becomes easy to leave the portion of each other in which it is hard coming to generate the phenomenon in which adjacent adhesion section 30 are connected for fiber, and the aforementioned adhesion section 30 is formed. In addition, in order to improve hydration nature further, as for the interval of 30d of adhesion section 30, it is desirable that it is larger than the width-of-face size (diameter) of the adhesion section 30.

[0025] Moreover, as for the sum total of the area which the aforementioned adhesion section 30 occupies in a backseat 20, it is desirable that it is 10 - 30% of the area of a backseat 20. When smaller than the aforementioned minimum, adhesion becomes less insufficient to making it hang on the absorptivity goods 1 certainly. Moreover, the interval of 30d of the adhesion section 30 and the adhesion section 30 becomes narrow too much, water stops being able to permeate (i) easily between the adhesion section 30 and the adhesion section 30, and sheet outcrop 20a of a backseat 20 stops easily being able to

collapse, if larger than the aforementioned upper limit with water due to (i) between the above. Consequently, the water rate of decay of the whole backseat becomes slow.

[0026] Although anything can be used if the binder which forms the aforementioned adhesion section 30 is a binder usually used as a hanging means of absorptivity goods, the binder of the water bloating tendency which is drainage system emulsions, such as an acrylic emulsion especially with the hydrophilic protective colloid layer, and polyvinyl alcohol are used.

[0027] this invention is effective when using the binder of the aforementioned water bloating tendency especially. When the excretion liquid given to the absorptivity goods 1 touches a binder, if it is the binder of water bloating tendency, it will be hard to produce degradation of adhesion, and is easy to maintain an effect stop shifting as an external wearing object. On the other hand, when thrown away into a rinsing toilet etc., decomposition takes comparatively long time to the binder of water bloating tendency. Since adhesion section 30 will be separated by water decay of sheet outcrop 20a of a backseat 20 as mentioned above even if it is such a case, even if decomposition of a binder takes time, a backseat 20 is separated finely. Moreover, although a foam adheres to the adhesion section and it becomes easy to rise within a septic tank to surface, the area of the adhesion section 30 is small as mentioned above, and since the adhesion section 30 is moreover separated mutually, it is hard to produce the phenomenon in which a backseat drifts within the septic tank by the aforementioned foam etc., within a septic tank.

[0028] In addition, although the interval of 30d of adhesion section 30 has the shape of polka dots which is homogeneity altogether in the adhesion section 30 shown in drawing 4, the interval of 30d of adhesion section 30 may not be homogeneity altogether. Moreover, the installation state of the adhesion section 30 may be established at random.

[0029] When it passes to a rinsing toilet, it distributes easily the stream or within a septic tank, and a backseat 20 can be formed by hydration paper, a hydration nature nonwoven fabric, etc. containing water-dispersion fiber. For example, the hydration paper formed in the shape of a sheet by the hydrogen bond of pulp fiber, using pulp as (1) raw material, (2) Hydration paper which was made to contain the water-soluble binder which combines fiber, using water-dispersion fiber, such as pulp and rayon, as a raw material, and was formed in the shape of a sheet, (3) -- the hydration paper which was made to carry out the confounding of the water-dispersion fiber, and was formed in the shape of a sheet, and (4) -- the nonwoven fabric of the hydration nature to which the confounding of the water-dispersion fiber with comparatively short fiber length was carried out by water jet processing etc. can be raised

[0030] Moreover, it is desirable to carry out coating of the water soluble resins, such as a copolymer which consists of polyvinyl alcohol or a unsaturated carboxylic acid, to the outside of a backseat 20, and to process so that it may become non-\*\*\*\*\*.

[0031] Moreover, as shown in drawing 3, with the rear face of a backseat 20, the aforementioned adhesion section 30 is formed in the wrap release paper 22. A release paper 22 tends to separate from the adhesion section 30, and, moreover, this release paper 22 does not check the adhesion of the adhesion section 30, when coating of the hydration nature resins, such as polyvinyl alcohol, is carried out to the front face of hydration nature sheets, such as hydration paper, it is covered with silicon resin etc. by the front face and the aforementioned silicon resin layer pastes the aforementioned adhesion section 30. Moreover, if a release paper 22 is passed in a rinsing toilet, the aforementioned polyvinyl alcohol layer will dissolve, and hydration paper will distribute, and release-paper 22 itself will be decomposed with water.

[0032] The absorption layer 21 can be formed from for example, hydration paper, pulp, or a nonwoven fabric. When forming in hydration paper, and two or more sheets of hydration papers with comparatively thin thickness are formed in piles, hydration nature is good and desirable. For example, eyes form the absorption layer 21 for 4-8 sheets of hydration papers [ about six sheets of ] which are 14 g/m<sup>2</sup> in piles preferably. In addition, when not being processed so that a backseat 20 may serve as non-\*\*\*\*\* , coating of the water soluble resin etc. may be carried out to the hydration paper of the lowest layer, and the function of non-\*\*\*\*\* may be given to the hydration paper which forms the absorption layer 21. Moreover, when the thickness of facing is thick, the absorption layer 21 does not need to be formed.

[0033] As for facing 10, it is desirable that the hydration sheet of two or more sheets piles up, and is formed. For example, as shown in drawing 3, the laminating of the hydration sheets 11, 12, 13, and 14 of four sheets is carried out, and facing 10 is formed. Each hydration sheet consists of hydration paper and a hydration nonwoven fabric like the aforementioned backseat 20. In the facing 10 shown in drawing 3, the hydration sheet 11 of the most significant facing a \*\*\*\* side is the wet span race nonwoven fabric of the hydration nature of eyes 45 g/m<sup>2</sup>, and the remaining hydration sheets 12, 13, 14 are the hydration papers of eyes 14 g/m<sup>2</sup>, respectively.

[0034] The laminating of the hydration sheets 11, 12, 13, and 14 of two or more sheets is carried out, and facing 10 is unified with the liquid dissociative unification means. The aforementioned unification means are the mechanical means which perform embossing which carries out needling processing or pressurizes partially the hydration nature sheet of two or more sheets (or heating pressurization) to the hydration sheet of two or more sheets, a means which carries out partial adhesion of between hydration sheets with water-soluble adhesives.

[0035] Needling processing is performed to the facing 10 of the absorptivity goods shown in drawing 3 as a unification means. As shown in drawing 3, where the laminating of the hydration sheets 11, 12, 13, and 14 is carried out, as a needle penetrates from a \*\*\*\* side, needling processing is performed, and the aperture 15 is formed in the whole surface. Consequently, the confounding of the fiber which constitute a hydration sheet from the circumference of an aperture 15 is carried out, and hydration sheets are combined. In addition, the aforementioned aperture 15 functions also as \*\*\*\*\* which leads liquid to the absorption layer 21. As for the diameter of an aperture 15, it is desirable that it is 3mm or less.

[0036] In addition, in this invention, the backseat in which the aforementioned adhesion section is prepared can be used for panties liners other than a sanitary napkin, a \*\*\*\*\* pad, etc. Moreover, as for these absorptivity goods, it is desirable to constitute so that the whole may serve as hydration nature so that the all can be passed and thrown away into a toilet etc. after use.

[0037] Moreover, when the wing section is prepared in absorptivity goods, it is desirable to prepare the adhesion section which was prepared also in the background (side which faces an external wearing object) of the wing section at the backseat.

[0038] Next, the manufacture method of the absorptivity goods of this invention is explained. Process drawing which forms the backseat and the compound sheet of a release paper with which drawing 5 constitutes the absorptivity goods of this invention, and drawing 6 are process drawings which form absorptivity goods using the aforementioned compound sheet obtained at the process shown in drawing 5.

[0039] As shown in drawing 5, the sheet 120 for backseats is supplied from the sheet roll 220 for backseats. An application, now the adhesion section 30 are formed in one side (field of an illustration top) of the supplied sheet 120 for backseats for a binder with the gravure roll 230. Then, a binder is dried with a dryer 231. When binders are drainage system emulsions, such as an acrylic emulsion, at this time, the adhesion of a binder becomes strong by carrying out predetermined-time dryness.

[0040] Then, the sheet 122 for release papers is supplied from the sheet roll 222 for release papers on the sheet 120 for backseats with which the binder was applied, and a compound sheet is formed. A compound sheet, i.e., the sheet 120 for backseats and the sheet 122 for release papers by which the laminating was carried out where a binder is inserted in between, is rolled round, and the compound sheet roll 235 is obtained.

[0041] In addition, at the process shown in drawing 5, the sheet 120 for backseats and the sheet 122 for release papers are reverse mutually, a binder may be applied on the sheet 122 for release papers, and a laminating may be carried out to the sheet 120 for backseats.

[0042] Next, the obtained compound sheet roll 235 is used for a process line different from former, as shown in drawing 6. In drawing 6, a compound sheet, i.e., the sheet for backseats, and the sheet for release papers let out from the compound sheet roll 235. At this time, the sheet for backseats serves as the illustration bottom. On a compound sheet, the material 121 for absorption layers is sent out one by one, further, the sheet 110 for facing lets out from a roll 210 on it, and an absorption layer is pinched between the aforementioned compound sheets. Then, the sheet 110 for facing, the material 121 for

absorption layers, and a compound sheet are joined by the splicing machine 240, it is further cut by the cutting machine 241, and the absorptivity goods 1 of this invention are obtained.

[0043] In addition, when the sheet for facing consists of a hydration sheet of two or more sheets, in the process which may supply the hydration sheet of two or more sheets from a roll 210 beforehand using what carried out the laminating, or is shown in drawing 6, the roll of a hydration sheet can be put in order one by one, the laminating of the hydration sheet can be carried out, and the absorptivity goods 1 can also be constituted.

[0044] Thus, if the manufacturing process of absorptivity goods forms a backseat and a release paper beforehand as another process, the processing speed of the manufacturing process line of absorptivity goods will not be related, and a compound sheet will be formed. Therefore, it becomes easy to take the drying times, such as a binder, into consideration. In the manufacture method of the usual absorptivity goods, in order to perform all processes with one line, the dryness process for pulling out the adhesion a binder is processed with the same line speed as other processes. Consequently, although there was a problem that the adhesion of a binder declined, the problem is solved in the manufacturing process of this invention.

[0045]

[Example] Although an example is given and this invention is explained hereafter, this invention is not limited to this.

[0046] The panties liner of hydration nature as shown in drawing 1 -4 using the following material was formed. The eyes of the wet span race nonwoven fabric of hydration nature used as facing are 45 g/m<sup>2</sup>, and the eyes of hydration paper are 20 g/m<sup>2</sup>. Moreover, the air RAID pulp of eyes 60 g/m<sup>2</sup> was used as an absorption layer. Furthermore, the wet span race nonwoven fabric of the hydration nature of eyes 30 g/m<sup>2</sup> which consists of fiber (rayon and/or pulp) with a fiber length of 2-3mm was used as a backseat. Moreover, the adhesion section prepared in the backseat is an interval (interval between the adjacent adhesion sections.) shown in Table 1. A unit is mm and a rate of area (sum total area of the joint to backseat area.). The unit consisted of %s. The next measurement was performed about the obtained sanitary napkin. A result is shown in Table 1.

[0047] (Adhesion) You stuck on silk satin the backseat to which the binder was applied, and made it stuck by pressure using 2kg roller. Then, the friction test of a backseat was performed using the tensilon testing machine. (A front less or equal and a unit are mN) .

[0048] (Septic tank test) The sanitary napkin was poured from the toilet bowl to the septic tank, and the behavior of a subsequent sanitary napkin was observed visually. The evaluation method is as follows.  
O : a product carries out hydration and sinks. x: Suspended matter is generated near the water surface of a septic tank.

[0049] (Hydration nature) JIS P It measured according to the hydration sex-test method of 4501. When detail was given, what cut the sample to 10cm by 10cm was supplied to the beaker which is the capacity of 300ml containing 300ml of ion exchange water, and it agitated using the rotator. A rotational frequency is 600rpm. The distributed state of the sample at this time was observed with time, and time until it distributes was measured. The evaluation method is as follows. O : it is hydration within 100 seconds. \*\*: It is hydration less than [ 300 second ]. x: Don't carry out hydration.

[0050] Moreover, it examined like [ example / of comparison ] the example.

[0051]

[Table 1]



表1

	実施例1	実施例2	実施例3	比較例1	比較例2	比較例3
間隔	5	5	5	2	5	5
面積率	12	23	28	28	7	35
粘着力	1009	1185	1538	1381	196	1577
浄化槽テスト	○	○	○	○	○	×
水解性	○	○	○	×	○	×

[0052] If the interval between the adhesion sections is the same as the fiber length contained in a backseat, and smaller than it so that a result may show, the hydration nature of absorptivity goods will fall remarkably. Moreover, if the rate of area of the adhesion section exceeds 30%, it will become easy to generate suspended matter near the water surface of a septic tank.

[0053]

[Effect of the Invention] As explained in full detail above, in the absorptivity goods of the hydration nature of this invention, an adhesive layer is applied to the rear face of a backseat, and even if it was the case which receives the arrival at the bottom etc. where an effect was heightened stop shifting, when it passes to a rinsing toilet, a backseat becomes that it is easy to distribute finely.

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[Translation done.]